

Claims

I claim:

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1. A method for characterizing an image comprising:
partitioning the image into a plurality of partitions, each partition including a plurality of pixels, each pixel having a color, and
determining a frequency of occurrence of each color of the plurality of pixels within each partition.
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2. The method of claim 1, further including
quantizing an encoded color of each pixel to provide the color of each pixel.
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3. The method of claim 2, further including
identifying a plurality of populous colors, based on the frequency of occurrence of each color, and
characterizing the image based on proportions of each of the plurality of populous colors in each partition.
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4. The method of claim 2, wherein
quantizing the encoded color includes .
identifying a set of color centers, and
determining the color of each pixel based upon a color distance between the encoded color of each pixel and each of the set of color centers.
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5. The method of claim 1, further including
identifying a plurality of populous colors, based on the frequency of occurrence of each color, and
characterizing the image based on proportions of each of the plurality of populous colors in each partition.

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6. A method of comparing a first image to a second image, comprising
partitioning the first image into a plurality of first partitions, each first partition including
a plurality of first pixels, each first pixel having a color,
determining a frequency of occurrence of each color of the plurality of first pixels within
15 each first partition,

partitioning the second image into a plurality of second partitions, each second partition
including a plurality of second pixels, each second pixel having a color,
determining a frequency of occurrence of each color of the plurality of second pixels
within each second partition

10 comparing the frequency of occurrence of a select set of colors in each first partition with
the frequency of occurrence of a corresponding select set of colors in each second partition. ✓

7. The method of claim 6, further including

quantizing an encoded color of each pixel of the plurality of first pixels to provide the
15 color of each pixel of the plurality of first pixels. ✓

8. The method of claim 7, further including

identifying a plurality of first populous colors, based on the frequency of occurrence of
each color of the plurality of first pixels, and

20 identifying a plurality of second populous colors, based on the frequency of occurrence
of each color of the plurality of second pixels; and

wherein

the select set of colors in each first partition corresponds to the plurality of first populous
colors, and

25 the corresponding set of colors in each second partition is based upon a color difference
between each of the plurality of second populous colors and the plurality of first populous
colors. ✓

9. The method of claim 7, wherein

quantizing the encoded color includes

identifying a set of color centers, and

determining the color of each pixel based upon a color distance between the
5 encoded color of each pixel and each of the set of color centers.

10. The method of claim 6, further including

identifying a plurality of first populous colors, based on the frequency of occurrence of
each color of the plurality of first pixels, and

10 identifying a plurality of second populous colors, based on the frequency of occurrence
of each color of the plurality of second pixels; and

wherein

the select set of colors in each first partition corresponds to the plurality of first populous
15 colors, and

the corresponding set of colors in each second partition is based upon a color difference
between each of the plurality of second populous colors and the plurality of first populous
colors.

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5 11. A system for characterizing an image comprising:

a partitioner that is configured to partition the image into a plurality of partitions, each partition including a plurality of pixels, each pixel having a color, and
an accumulator that is configured to determine a frequency of occurrence of each color of the plurality of pixels within each partition.

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7 12. The system of claim 11, further including

a quantizer that is configured to quantize an encoded color of each pixel to provide the color of each pixel.

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13. The system of claim 12, wherein

the system is configured to characterize the image based on the frequency of occurrence of each of a plurality of populous colors in each partition.

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14. The system of claim 12, wherein

the quantizer is configured to quantize the encoded color based upon a color distance between the encoded color of each pixel and each of a set of color centers.

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15. The system of claim 11, wherein

the system is configured to characterize the image based on the frequency of occurrence of each of a plurality of populous colors in each partition.

16. A system for comparing a first image to a second image, the system comprising:
a similar color determinator that is configured to determine
a mapping between a first set of colors of pixels of the first image and a second
set of colors of pixels of the second image, based on a color distance between each of the first set
of colors and each of the second set of colors,
the mapping thereby providing a corresponding color in the second set of colors
for each color in the first set of colors, and
a similarity determinator that is configured to determine an image similarity measure
based on a comparison of a frequency of occurrence of pixels of each of the first set of colors
and a frequency of occurrence of pixels of each of the corresponding colors in the second set of
colors.

17. The system of claim 16, wherein
the first image is partitioned into a plurality of first partitions,
the second image is partitioned into a plurality of second partitions,
the similar color determinator is configured to determine the mapping between the first
and second sets of colors of pixels for each partition of the plurality of first and second
partitions, and
the similarity determinator is configured to determine a plurality of similarity measures
based on the comparison of the frequencies of occurrence of pixels of each of the first and
second set of colors for each partition of the plurality of first and second partitions, and further
includes
an accumulator that is configured to provide the image similarity measure based
on a composite of the plurality of similarity measures corresponding to each partition of the first
and second partitions.

18. The system of claim 17, wherein
the similarity determinator is further configured to determine the similarity measure
based upon the color distances between each of the first set of colors and the corresponding color
in the second set of colors.

19. The system of claim 16, wherein

the first set of colors of the pixels of the first image is based on a quantization of encoded colors of the pixels of the first image.

5 20. The system of claim 17, wherein

the quantization of encoded colors is based on a color distance between the encoded color of each pixel and each of a set of color centers.

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